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MINUTES OF JOINT MEETING OF GRASSLANDS AND FERTILIZER  
STEERING COMMITTEES

U.S.D.A. September 10, 1953

Members of -

National Grasslands Steering Committee

National Fertilizer Committee

Directors of Extension:

L. E. Hoffman, Indiana  
C. U. Pickrell, Arizona  
H. R. Albrecht, Pennsylvania  
Clay Lyle, Mississippi

Directors of Extension

M. A. Anderson, Iowa  
G. M. Worrilow, Delaware  
D. W. Watkins, South Carolina  
G. H. Starr, Wyoming

Directors of Experiment Stations

R. D. Lewis, Texas  
H. M. Briggs, Wyoming  
D. H. Sieling, Massachusetts  
H. E. Myers, Kansas

Directors of Experiment Stations

R. M. Cummings, North Carolina  
N. J. Volk, Indiana  
P. S. Eckert, Arizona  
G. F. Dow, Maine

Department of Agriculture

C. M. Ferguson, Ext., Chairman  
P. F. Aylesworth, Secy.  
P. W. Cardon, GS  
H. C. Knoblauch, ARA-OES  
B. T. Shaw, ARA

Department of Agriculture

C. M. Ferguson, Chairman, Ext.  
Sherman Johnson, BAE  
L. I. Jones, Ext.  
H. C. Knoblauch, ARA-OES  
L. B. Taylor, M&F - PMA  
C. E. Kellogg, SCS

Director Ferguson convened the meeting at 9:30 a. m., September 10. He called attention to the agenda and expressed the hope that Assistant Secretary Coke would be able to drop in on the meeting sometime during the morning. He said he didn't know of any programs that had any more drive back of them than the Grasslands Program and the Program on More Efficient Use of Fertilizer and Lime. He felt sure the members were familiar with the history of the setting up of the committees and knew something of the work they had done. He thought it advisable to start the program off with a picture of what has been happening in the States by calling on each regional director (Extension and Research) for a report.

Director Hoffman (Ind.) for the North Central States: The Grasslands Program had advanced another step in the Central States. Due to the widespread drought it appears that they needed a water program as well as a grasslands program. The greatest advance was made in the utilization of the grass rather than a campaign for more grass. For instance, the use of grass silage had increased 300 or 400 percent in his State. Farmers have recognized if they are going to grow grass they are going to have to find out how to better utilize it.



All the States in the central region are still plugging on the Grasslands Program in spite of the tough year, and will continue to do so. In fact, they were plugging a long time before this program started. No one is getting discouraged about the outlook. The fact that we are now beginning to fertilize grass and pay a lot more attention to that, it is coming into its own in a very important way.

Director Pickrell (Ariz.): In the 11 Western States, the work in grasslands is divided quite distinctly into range land and quite a lot in irrigated areas. In the irrigated land they are using grass, rotation of cultivated crops and also permanent pastures. They are employing different methods in applying water to grass including sprinkler systems, etc. The majority of the West is given to non-cultivated crops and there the income is from grass.

There are very many different things going on. Some States have the same programs but are using different methods. They have many reseeding programs and are using new varieties with great success. One of our greatest problems is to so manage the range to get the greatest good out of the grass that is already there. Conservation and deferred grazing are also being used. One of the experiment stations, given over entirely to range-use, has found one of the most popular things is the removal of plants of non-forage value.

Director Albrecht (Pa.): In the northeast we have featured the Green Pasture Contests, and held large Grassland Field Days. They are still continuing, but in many instances they are boiled down to county enterprises. The biggest problem, as it is in the middle-west, is the matter of utilization, and there is a terrific conversion over to grass silage throughout the northeastern region.

The fertilizer use on grasslands has been stepped up considerably, and I would say the emphasis has been on production of better grasses and more grass whether it is used in rotation, pasture or otherwise.

A lot of interest and activity have been created in pasture renovation. Some people are getting set up to renovate hillside pastures on a custom basis.

There is increased interest in breeding of grasses and legumes due primarily to the stimulus of the Pasture Laboratory which has been operating for almost 20 years. In the northeast it is not as feasible to produce seed as it is in the West and we have to rely on that area for much of our seed.

At this point, Mr. J. Earl Coke, Assistant Secretary, came in and Mr. Ferguson called on him for any remarks he cared to make.

Mr. Coke suggested setting up a committee broader than these two, and that such a committee might consider not only Grasslands, Fertilizer and Lime, but also what problems that required special emphasis. Such a broad committee might determine agricultural resources, conservation and improvement, and what emphasis would be needed from year to year, etc. In and through such an approach a total look at the entire problem could be had and advice given accordingly.

Statement by Assistant Secretary, J. Earl Coke, before the Joint  
Committee Meeting of Grasslands and Fertilizer

September 10, 1953

"I would like to say, first, that I think the Grasslands Committee and the Fertilizer Committee have made some excellent recommendations and contributions, and you are to be complimented on the very fine work that you have done. I would like to present to you a problem regarding committees and have you consider it as you go along. One of the problems that we have in the Department is the very large number of committees which we have, and the time that is required from people who participate, and they certainly participate most readily and effectively. We wonder if it might be advisable to set up a broader committee, in order that you could consider not only Grasslands and Fertilizer, but that the broader committee would then consider what types of problems should require emphasis.

As we go along, we might find that there are other fields in which we need emphasis and, instead of having a larger number of committees, if we had a committee which would consider what type of emphasis is needed, it would be helpful. It is an approach where we would have over-all advice and a total look at the entire problem. One of the difficulties that we get into in committees is that so many of them are fairly narrow in their aspect. So I would like to leave this with you for your consideration."



Director Ferguson expressed appreciation for Mr. Coke's statement and suggested the Committee's take time in their separate meetings to examine the proposal and see how the functions of each committee might be tied in with it.

Dr. Lyle (Miss.): The severe drought in the South for the past two summers and the severe break in livestock prices have been discouraging for grassland farmers and slowed the development of improved pastures. The South recognizes it must balance its agriculture with more livestock, and we hope the present set-back is only temporary. Reports from Southern States indicate great interest and satisfactory progress in grassland programs. The drought has stepped up the interest in silage, especially grass silage, and the number of silos has increased greatly, particularly trench silos.

Since cotton acreage will almost certainly be controlled in 1954, the acres removed will go largely into improved pastures as other cash crops are also under control.

Dr. Lewis (Texas): During the past five years there has been a very great intensification of research on grass throughout the South. Just this year another boost has been given the program through the allocation of regional research funds to the forage and pasture project. A great deal of research is now directed towards developing cropping systems that include grass and legumes as a proper component in such a system. Nearly every State has long-time research under way or being initiated on the very important problem of developing year-around or almost year-around pastures.

The use of grass silage and other research on utilization is extensive, but we still have many problems. Silage will keep over a period of years and those who had it stored the last two years found it like money in the bank.

There is a tremendous increase in research on the development of new grasses and legumes. Looking over the results of research in our State with Coastal Bermuda, whether under dry-land situations or under high rainfall or with irrigation, it is outstanding and needs to be forcefully put into far greater practice. In one case under irrigation we expect to get over 15 tons of dry weight to the acre.

Emphasis is being placed in the Southwest on domestic exploration for native legumes and grasses that show some degree of drought resistance. This is in cooperation with B.P.I.S.A.E. In this exploration work, which will spread over Texas, parts of New Mexico and Arizona, and northern Mexico, over a thousand superior clones have already been located. Even under severe drought conditions we have found clones.

As mentioned by Mr. Pickrell, the research on eradication of water-stealing brush is moving ahead rapidly. A great many of our range problems, including the increase of brush, arise from overgrazing. Research is showing that with fewer animals we can have greater total gains and still better grass and better cover, but the work needs expanding.

I have emphasized a number of times the need for more work and study on the credit problem. There are a number of credit systems set up, but only a few of the banks have really gone at it from the standpoint of the successive steps that will have to be taken. It needs more objective research.



Dr. Sieling (Mass.): Grassland Research in Northeastern States includes:

- (a) Plant Selection and Breeding:- Practically all the research groups have been actively engaged in this work and some of the outstanding results are: Narragansett strain of alfalfa developed at the Rhode Island Station; Atlantic alfalfa at New Jersey; Pennscott Red Clover at Pennsylvania; and the Empire strain of Birdsfoot Trefoil at Cornell.
- (b) Crop and Soil Management:- There have been extensive studies of the management practices affecting crop production. Studies at all stations have been conducted to determine the compatability and adaptability of species; the fertility requirements of various grasses and legumes; weed control; pasture renovation; and the evaluation of varieties and strains. More recently some of the stations have inaugurated studies of the effects and value of supplemental irrigation.
- (c) Harvesting, Handling and Storage.
- (d) Insect and Disease Control.
- (e) Fundamental Studies.

Dean H. M. Briggs (Wyo.) (Reported by G. H. Starr) - Research Programs in the Western Area include:

1. Breeding and Selection Work with grasses and legumes. A new variety of alfalfa (Vernal) has been released. With grasses, these varieties have been released: Bromar, Mancher, Topar, Witmar, Cascade Lotus and Sheridan big blue grass. In Alaska emphasis is being placed on use of smooth brome, timothy and Kentucky blue grass. The release of the Alaskland red clover has marked the first instance of a hardy legume available to Alaska farmers.
2. Adaptation of varieties and mixtures is going on in practically every State.
3. Research is proving especially valuable in seed production, both on dry land and irrigated conditions. The development of several strains of wheat grass have been most valuable. Row-seedings have usually given higher yields than solid seedings. Tall wheat grass has yielded two or three times as much seed under irrigation as on dry land; crested wheatgrass has not responded so well, and the same is true for Intermediate and Pubescent varieties.
4. In the control of weeds and sagebrush, extensive work with chemicals, mechanical means, and burning are proving valuable.

Dr. Myers (Kans.):-Grassland Research in the North Central States - All States in the North Central Region are carrying a grass research program. In most cases this research program is being carried in cooperation with the Division of Forage Crops and Diseases, ARA-PISAE, and with the SCS, particularly its nursery division. Additionally, there is one regional research project, NC-7, which has to do with the introduction of new crop varieties, one phase of which is devoted to native grass plant explorations in an attempt to get improved native grasses and legumes.



The special problems facing the North Central Region are the following: (a) How to make grasslands more productive; (b) How to get greater emphasis on forage crops research in contrast to grain crops research. Most stations have an individual or a group of individuals working on individual grain crops such as corn, wheat, oats, etc. Under forage crops we have even more species, but for the most part one or two men will handle the entire group; (c) The bloat problem; (d) Techniques for pasture evaluation; (e) Utilization of pastures; (f) Economics of grass silage and grassland economy in general.

There is a distinct tendency to think of grass as a cheap feed, and it is so referred to rather frequently. It would appear that feeds which produce one pound of gain should be equally valuable. Yet we frequently hear of the cheap gains obtained on pasture and the expensive gains in the feedlot. There is no good, logical reason why the first 200 pounds of gain is any less valuable than the last 200 pounds.

With the wheat reduction program in operation and the possibility that there may be reduced acreages of other grain crops in the future, we have an opportunity before us to stimulate increased acreage in permanent pastures. The extra forage resulting should not be thought of in terms of increasing the livestock numbers but merely to raise the level of nutrition of the livestock already on hand.

After traveling through many States, I am convinced that the term "improved pastures" is a myth so far as the average farm is concerned. In most areas an improved pasture is the exception rather than the general rule. This certainly points out a very serious need for additional emphasis on grass in both our research and extension programs.

Two Addresses: At this point addresses were heard from Dr. R. C. Engberg, of the FCA on "Management and Credit Problems in Grassland Farming," and from O. V. Wells, Chief of BAE, on "Possible Effects of the Price-Cost Squeeze on Grassland Farming." Copies of their addresses are attached as a part of these minutes.

#### Afternoon Meeting

Director Ferguson opened the afternoon meeting for questions and discussion on the grassland program covered in the forenoon. Dr. Kellogg said he had observed a slightly different picture than expressed by Dr. Myers, especially through the South. He concluded a lot of solid progress. In areas once badly eroded you now see green fields and occasionally old gully scars, but on the whole we have made progress.

Dr. Myers reiterated that as he drove over the country and looked for the improvement in pastures, the fewness of them impresses him rather than their plentifulness. Dr. Beard (BPI) agreed with Dr. Myers that even though some progress had been made there has not been a large increase.

Dr. Sprague observed that at the U. S. Pasture Laboratory they had been disappointed that more farmers had not made improvements. Farmers he thought had picked up quite a number of suggestions and were putting them into practice, but they had not gone as far as they could go.



Hoffman thought we have made a lot of progress; however, in some of the States where grasslands are supposed to be far advanced, there are a lot of "exercise lots" called pastures. It can't all be done over night.

Sixth International Grassland Congress Report: The first copies, just off the press, of the Proceedings of the 6th International Grasslands Congress were exhibited. Wilbur Carlson, who was chairman of the Finance Committee (6th IGC), explained the financial status of the IGC. He reported that \$91,789.88 had been received from all sources and \$59,586.19 had been expended to date; and when the cost of printing the Proceedings (\$24,000) was paid there would be a balance of some \$8,000 left. 2,000 copies of the proceedings were printed and orders were on hand for approximately 1,600 copies.

Dr. Wagner, who had done much of the editing of the Proceedings, mentioned others who had helped and said it was entirely an extra-curricula job and a lot of extra work to get all the papers in line for printing.

Dr. Cardon expressed his appreciation for the job in getting the Proceedings ready for mailing. He also gave a brief resume of the establishing of the U. S. Pasture Laboratory at Penn State; of the apprehension, etc., that had to be overcome; the difficulty in finding trained personnel, and added that many of the same difficulties and slow spots experienced in getting research and action in grassland improvement were found in other aspects of agriculture over the past half century, but there was increasing confidence that in this direction lies common sense if we know how to continue to develop.

Chairman Ferguson called on members of the Fertilizer and Lime Steering Committee for progress reports of the work in their respective regions on the Program for More Efficient Use of Lime and Fertilizer.

Dr. Volk (Ind.): stated they had a shortage of fertilizer in the North Central Region. The shortage of strategic materials is hampering efficiency in the utilization of fertilizer. He also thought their liming program was below par. There was need for an improvement in the quality of the lime being distributed to farmers. The soil testing programs are valuable and are being stepped up. The soil test is taking out a lot of guess-work in fertilizer and lime programs. Irrigation experiments are showing remarkable increases in yields on fertilizer plots, and the quality is also up on these tests.

The fertilizer and lime program is well organized between the agronomist and fertilizer industry people. Each State has its own organization that meets every year, decides on a program and works together. The lime-fertilizer program is moving very fast.

Dr. Kellogg inquired if one was moving faster than the other, to which Dr. Volk thought the fertilizer program was moving faster than the lime program, and the latter could be stepped up.

Dr. Dow (Maine): -As far as the Northeast is concerned, it could be called the grand-daddy of the area in making efficient study and use of fertilizer. We do not need to be sold - in fact we are putting more fertilizer on cash crops, like potatoes, than are perhaps justified. The big need in the Northeast is



for more lime. We are only using one half the lime we used in 1947. With pastures we have a long way to go yet. We hope to make better use of the ACP, especially in use of lime. The research work on lime and fertilizer in the Northeast is under the Northeast Soil Research Committee.

Dr. Eckert (Ariz.):- The use of fertilizer in the West is increasing. In Arizona there's only one million acres in cultivation, but we use over 100,000 tons of fertilizer. Soil conditioners have entered our research in great volume recently. Soil conditioners seem to be needed on irrigated land, especially. One of our problems is to get sales people to deal in simple fertilizers as well as mixed fertilizers.

Dr. Cummings (N.C.):- If the Northeast is the grandfather of fertilizer-use programs, the Southeast might well be the great-grandfather. Historically, we spend from 10 to 15 percent of the cash income for fertilizers, and we would have very little of the agriculture we now have without the use of fertilizers. Our program is concentrated on more efficient use of fertilizers than on use of more fertilizers.

The summary on fertilizer responses prepared by the fertilizer work group gave a basis for economic analysis for determining cost-price relationship and levels at which one could expect economic returns. The cost-price squeeze and unfavorable weather conditions have cut back on our income the last few years. Reports from Southern States are shown by some of the publication exhibits in this room. Some of the States are organizing schools with the fertilizer industry people and dealers, and that is a soft spot in our educational program. Soil tests are being emphasized more and more in practically all States. In 1950 there was one soil test for every 820 acres in the South.

Recent organizations of Plant Food Associations, bringing together facts that get more efficient use of fertilizer, are helping in many States.

Starr (Wyo.):(Distributed chart):- Work being done to evaluate quality of fertilizer. Increase is noted in phosphorous and limestone. Quite a bit of work being done in the mountain meadows applying fertilizer with water. Mountain meadows are places where they like to put water on and leave it quite awhile. That doesn't work very well with fertilizer use. As Volk said, along with this work of plant breeding we have to consider the reaction of varieties under different fertility levels. There is stimulated activity in fertilizer work. It has caused us to get some fertilizer information together - circulars and bulletins - and get together on a college level at least and work things out. It is important for groups to work together and to tell the same story on fertilizer in the States.

Worrilow (Del.):- In the Northeast our supply of fertilizer and lime is greater than that of land and labor. We feel definitely the encroachment and expansion of industry and real estate values on farm land. It makes it important that we get together and do a job of getting more efficient use of lime and fertilizer.



We do have a combined effort with research and Extension aimed at more efficient use of fertilizer. We are not operating any more on glamour but it is down to "on-the-farm" basis.

One of the main things in the Northeast is the soil testing program which is definitely expanded in Maryland, New Jersey, Pennsylvania, Massachusetts, West Virginia and a lot of others. New Jersey has just gone into a mobile set-up where they will go into each county and do the job and charge a fee. There is some question as to the real value of soil testing, but it certainly helps. Pennsylvania, Maryland, and Delaware got together with industry members and did get the number of grades cut down. Fertilizer recommendations were determined in cooperation with industry, research, and extension.

Another thing is the place of lime in the crop rotation. I definitely agree with Dr. Volk that the lime program is not up with the fertilizer. There is another thing that goes on as far as economics are concerned. That is the machinery to apply this fertilizer and get it on at the right rate, especially the application of anhydrous ammonia. We are getting a little of that done through custom work and the farmer doesn't have to invest in the machinery and it is a real saving in that respect.

Anderson (Iowa):- We are youngsters, particularly in the western part of the North Central region. Our use of fertilizer has already expanded rapidly in the last few years. All States in the region have a program on efficient use of fertilizer and lime. The gap between that now known and what is now practiced might be illustrated by the agricultural capacity report which projected the yields of corn in Iowa from 50 to 85 bushels under maximum or optimum conditions. One-third of that increase from 50 to 85 bushels was due to fertilizer and lime so that there is a gap between those facts now known and those practiced by farmers. Estimates on this capacity study told us that we could use 7 times as much fertilizer as we now use.

All States are working but need to do more with industry, particularly fertilizer dealers, short courses and information-wise on efficient use of fertilizer. In many of the States the TVA is cooperating on widespread demonstrations on use of fertilizers and farm unit demonstrations. There is an increase in soil testing in the North Central area. One important innovation in soil testing, as we get more and more research, is the information that is given to farmers. Two different recommendations in one State on the same soil test, the recommendation that would provide for maximum profits and the recommendation that would get the greatest return per dollar invested in fertilizer.

Watkins (S.C.): All serious farming efforts in my State involve the use of fertilizer. They all use commercial fertilizer if they farm seriously. It is a question of what is the best use; what combination and what formulas and how much per acre is best to use. With respect to formulas, I would say we are gradually shifting to a 1-1-1 ratio which means a lot more nitrogen than we have heretofore used. We haven't reached that point yet, but a lot of our work has been in that direction. As to the economics - shifts and changes that take place in agriculture - some of us are apt to sit on the wheel like the fly and say, "What a big dust we are making." As a matter of fact, customs adjust themselves to the needs of the situation economically.

We have had plant food societies organizing all through the South. That brings the trade around the table with the scientists and the Extension folks. That is a good move. They get some understanding from the college people and the Department people and we learn a lot from them. By putting our heads together occasionally through these meetings of the Plant Food Society we can make a lot more progress than we could otherwise do. We are using in South Carolina twice as much fertilizer as we did 10 years ago. Last year we used about 1 million tons of all kinds of fertilizer. Lime is our weakest spot. We have a chance to push instead of hang on.







